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DEPARTMENT : INFORMATION TECHNOLOGY

SUBJECT : ARTIFICIAL TECHNOLOGY

LAB : 08

TASK: 01

Make a calculator using the function the code should use only 2 operands(+ and -) for division and multiplication as well.

```
def add(a, b):
    return a + b

def subtract(a, b):
    return a - b

def multiply(a, b):
    result = 0
    positive = True
    if b < 0:
        b = -b
        positive = False
    for _ in range(b):
        result = add(result, a)
    return result if positive else -result

def divide(a, b):
    if b == 0:
        return "Error: Division by zero"
```

```
    count = 0
    negative = False
    if a < 0:
        a = -a
        negative = not negative
    if b < 0:
        b = -b
        negative = not negative
    while a >= b:
        a = subtract(a, b)
        count = add(count, 1)
    return -count if negative else count
def calculator():
    a = int(input("Enter first number: "))
    op = input("Enter operator (+, -, *, /): ")
    b = int(input("Enter second number: "))
```

```
    if op == '+':
        print("Result:", add(a, b))
    elif op == '-':
        print("Result:", subtract(a, b))
    elif op == '*':
        print("Result:", multiply(a, b))
    elif op == '/':
        print("Result:", divide(a, b))
    else:
        print("Invalid operator")
calculator()
```

OUTPUT:

```
Enter first number: 56
Enter operator (+, -, *, /): -
Enter second number: 24
Result: 32

=== Code Execution Successful ===
```

TASK:02

Write a functions that ask the user the shape and make the star shaped. (Like it asks the shape (triangle or Rectangle) and make that shape.

```
def draw_triangle(height):
    for i in range(1, height + 1):
        print('*' * i)

def draw_rectangle(width, height):
    for _ in range(height):
        print('*' * width)

def shape_drawer():
    shape = input("Choose a shape (triangle or rectangle): "
        ).strip().lower()

    if shape == 'triangle':
        height = int(input("Enter the height of the triangle: "
            ))
        draw_triangle(height)
    elif shape == 'rectangle':
        width = int(input("Enter the width of the rectangle: "))
        height = int(input("Enter the height of the rectangle: "
            ))
        draw_rectangle(width, height)
    else:
        print("Invalid shape")
shape_drawer()
```

OUTPUT:

```
Choose a shape (triangle or rectangle): triangle
Enter the height of the triangle: 10
*
**
***
****
*****
******
*******
********
*********
**********

=== Code Execution Successful ===
```